



712CD

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Presentation Title: OSD Perspective - Analytic Challenge: Global War on Terror Analysis

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SPECIAL SESSION 1:		TUTORIAL:	
SPECIAL SESSION 2:		OTHER:	
SPECIAL SESSION 3:	Sponsor Hot Topics: GWOT		

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OSD Perspective - Analytic Challenge: Global War on Terror Analysis

Preston Dunlap

**75th MORS Symposium
June 2007**

Irregular Warfare

OSD/PA&E

“A violent struggle among state and non-state actors for legitimacy and influence over the relevant populations. IW favors indirect and asymmetric approaches, though it may employ the full range of military and other capabilities, in order to erode an adversary’s power, influence, and will.”

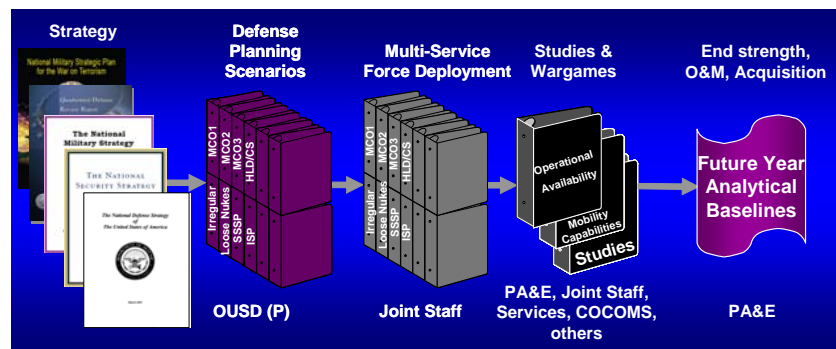
-Irregular Warfare Joint Operating Concept

- Counterinsurgency (COIN)
- Counterterrorism (CT)
- Stabilization, security, transition, and reconstruction operations (SSTRO)
- Unconventional warfare (UW)
- Foreign internal defense (FID)
- Strategic communications
- Psychological operations (PSYOP)
- Information operations (IO)
- Civil-military operations (CMO)
- Intelligence/counterintelligence activities
- Transnational law enforcement

Irregular Warfare analysis includes physical science but emphasizes social science phenomena

Framework for Irregular Warfare Analysis

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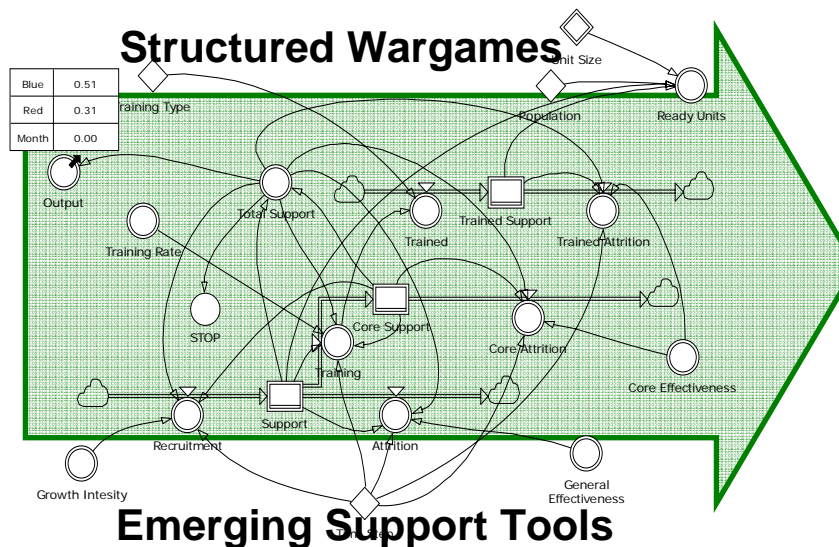
Planning and Programming



Operational Assessments

DoD/Ally/Partner Actions

- Diplomatic
- Information
- Military
- Economic
- Financial
- Intelligence
- Law Enforcement



Effects

- Political
- Military
- Economic
- Social
- Information
- Infrastructure

Existing tools insufficient to examine Irregular Warfare

Approach to Irregular Warfare Analysis

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No single tool sufficient to examine Irregular Warfare: Conduct Subject Matter Expert wargame informed by suite of tools

- **Conduct subject matter expert wargame**
 - Counterterrorism: GWOT X-Game
 - Counterinsurgency: Algernon commercial wargame derivative
 - Unconventional Warfare: Algernon
 - SSTR Operations: Peace Support Operations Model (PSOM)
- **Informed by suite of analytic support tools (e.g., agent-based, game theory, system dynamics, expert systems)**
 - System Dynamics: (M, E)
 - SEAS: (P, S, Info)
 - Generic rulesets derived from existing X-Game and COIN analyses (M: supplement models)

DoD/IA/Partner Actions

- Diplomatic
- Information
- Military
- Economic
- Financial
- Intelligence
- Law Enforcement

Wargame
supported
by suite of tools

Effects

- Political (P)
- Military (M)
- Economic (E)
- Social (S)
- Information (Info)
- Infrastructure (I)

*Lists are not exhaustive



Application of GWOT X-Game to IW Analysis: GWOT Extended “X” Game Purpose

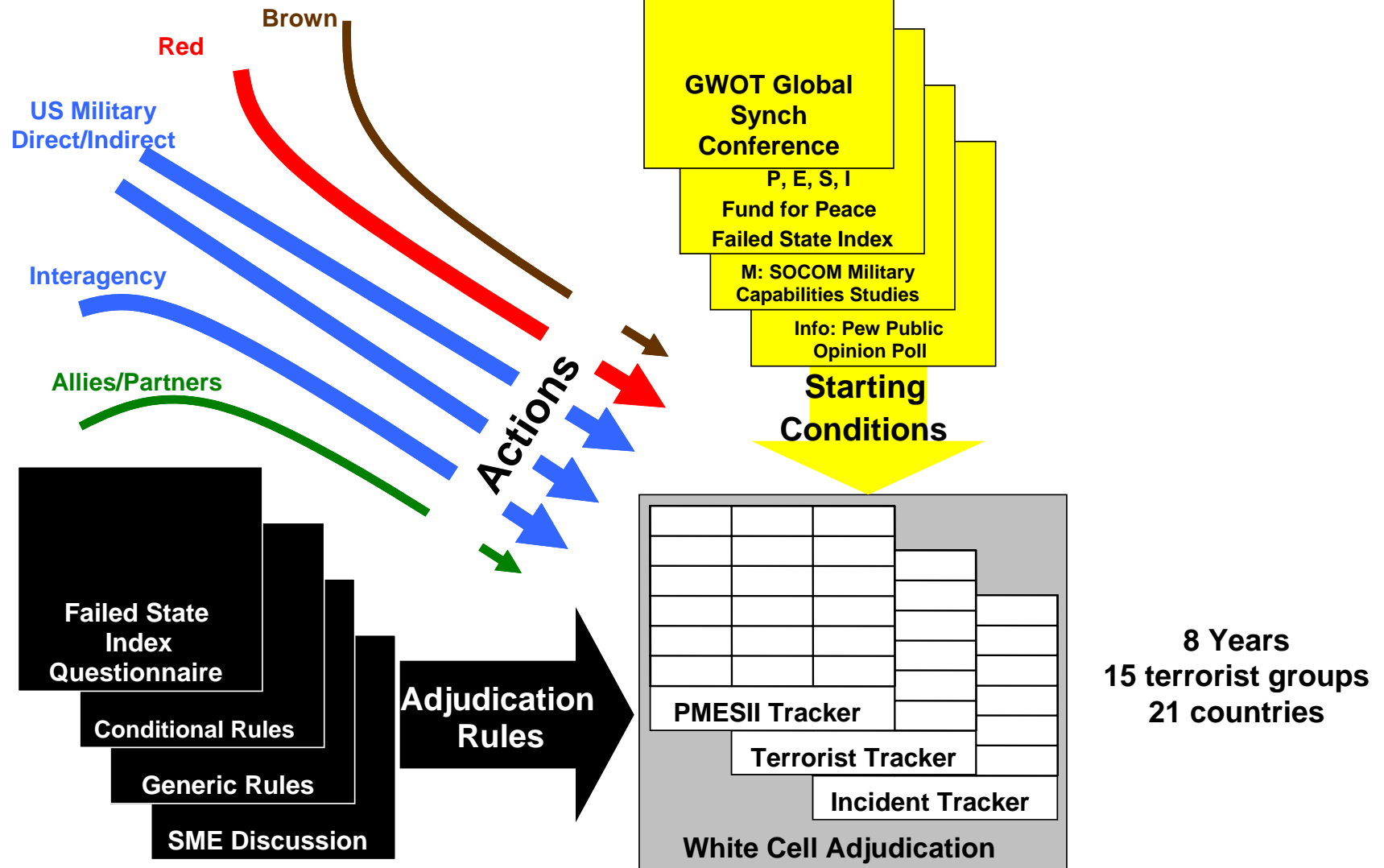
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Identify, assess, and prioritize capabilities used to prosecute the GWOT

- **Help operationalize the GWOT CONPLAN and the regional GWOT plans**
 - Identify types of WOT activities (location, frequency, duration)
 - Examine the relative contribution of activities to achieving WOT objectives
 - Identify resources needed to support activities (focus on Special Operations Forces - SOF)
 - Suggest activities where General Purpose Forces (GPF) might be fully/partially substituted for SOF
- **Scope**
 - Timeframe: 2007-2014
 - Multiple countries and terrorist groups

Application of GWOT X-Game to IW Analysis: GWOT Extended “X” Game Methodology

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DIMEFIL Actions: Diplomatic, Information, Military (Direct and Indirect), Economic, Financial, Intelligence, Law Enforcement
PMESII Conditions: Political, Military, Economic, Social, Information, Infrastructure

Application of PSOM to IW Analysis

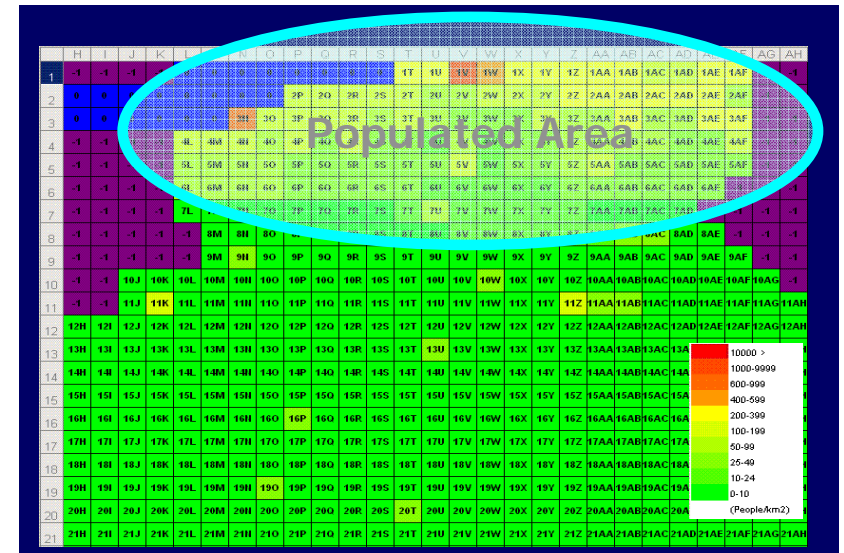
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•What is PSOM?

- Peace Support Operations Model developed by the UK MOD/DSTL
- Multi-sided, time-stepped, tool-assisted “war” game incorporating human players representing coalition, indigenous, threat, and NGO elements
- Incorporates UK historical case study analysis
- Success measured by progress against level of consent (legitimacy), security, and stability

•How has PSOM been used?

- Prototype used in joint/combined exercises
 - UK OIF wargame included allied participants (e.g., OSD/Policy SSTR, OSD/PA&E, Joint Staff participation)



Support adjudication of Political, Military, Infrastructure effects

Application of System Dynamics to IW Analysis

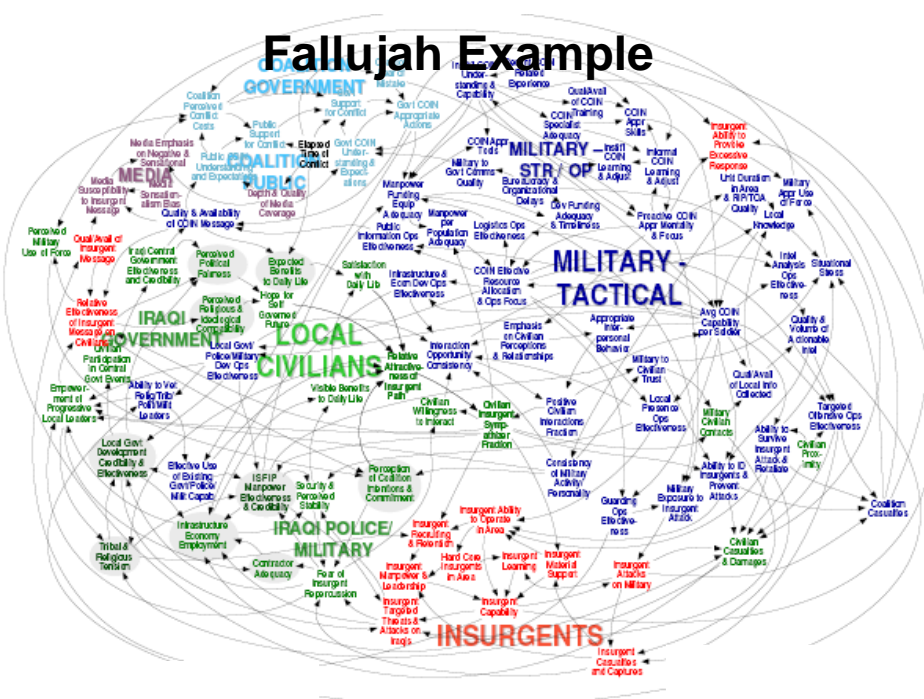
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•What is System Dynamics Modeling (SDM)?

- Invented at MIT during 1950s by Jay Forrester
- Simulates whole system behavior to help identify best levers to generate desired changes – not for point prediction
- Enables rapid development of a working hypothesis of underlying drivers and tradeoffs over time
- Organizes assumptions to facilitates discussion and iterative improvement to the model

•How has SDM been used?

- Conceptual system dynamics models for counterinsurgency developed at Naval Postgraduate School and MIT
- PA&E/GMU COINS Model
- DARPA Fallujah case study
- OA-07 GWOT analysis



Support adjudication of Economic and Military effects



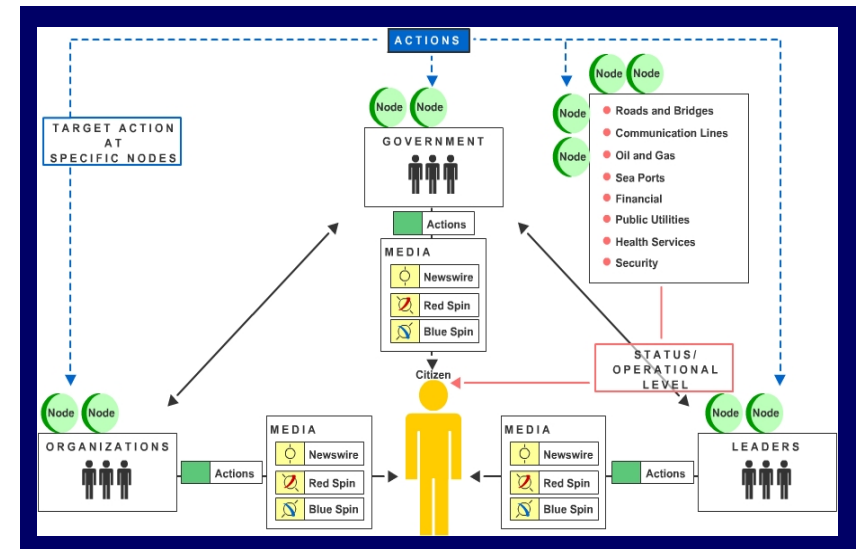
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•What is SEAS?

- Synthetic Environment for Analysis and Simulation developed by Simulex, Inc
- Agent-based DIME and PmESII (non-kinetic) simulation, where each entity from national governments, organization leadership and members, to individuals is modeled as an agent

•How has SEAS been used?

- Commercial business development and advertising
- Proctor & Gamble and Army Recruiting Command to assess effects of marketing campaigns on population attitudes
- JFCOM warfighting experiments (e.g., Urban Resolve series)
- DARPA PCAS case study
- OA-07 GWOT analysis



Support adjudication of Political, Social, and Information effects



Summary: OSD Perspective

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- **Analysis of Irregular Warfare requires a new modeling approach to represent**
 - DIMEFIL **actions** by Red, Blue, and Green: Diplomatic, Information, Military, Economic, Financial, Intelligence, Law Enforcement
 - PMESII **effects** for all actions: Political, Military, Economic, Social, Information, Infrastructure
- **Possible approach**
 - Structured subject matter expert wargame supported by analytic tools and social science models
 - System dynamics and agent-based models like SEAS appear to be promising capabilities to support wargame adjudication of DIMEFIL-PMESII interactions
- **Irregular Warfare MORS Workshop (11-13 December 2007)**
 - Improving Cooperation Among Nations in Irregular Warfare Analysis
 - Naval Postgraduate School
 - Working Groups: insurgency, terrorism, SSTRO, maritime ops



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GWOT Extended “X” Game Study Findings

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How do we support long term needs of the GWOT?

1. The wargame fully utilized most Special Operations capabilities

- The wargame was limited to a subset of GWOT activities and did not account for other SOF force structure demands
- The wargame accounted for planned SOF force structure increases

2. This suggests that continued force management actions will be needed to sustain the long term needs of the GWOT; options include:

- Rebalancing tasks between SOF and GPF and possibly within SOCOM
- Reducing demand (e.g., reduce level of effort, decrease concurrent activities, increase contribution from allies and partners)
- Increasing supply (e.g., accept higher deployment tempo, increase access to Reserve Component, continue to grow SOF force structure)

Application of Wargaming Tools to IW Analysis

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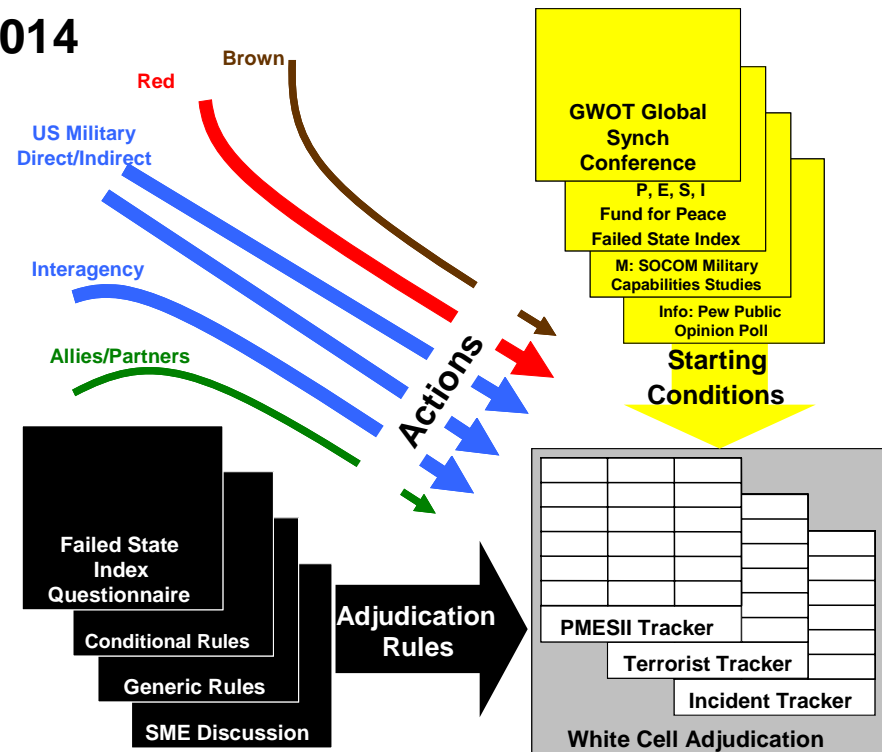
- **GWOT X-game developed extensive rule set to assess GWOT over 21 countries, 2007-2014**

- Fund for Peace Failed State Index employed to adjudicate Political, Economic, Social, and Infrastructure effects
- Study also developed extensive:
 - Generic rulesets: “If-then”
 - Conditional rulesets: “If x under specific conditions, then y”

- **Algernon developed extensive rule set to assess COIN/UW**

- Based on “Algeria The War for Independence 1954-1962” commercial wargame
- Multi-player, limited intelligence war-game at the operational & strategic levels of war
- Incorporates information operations, combat operations, resources, and the impact of political will on Red, Green, and Blue operations
- Permits analysis of differing offensive and defensive strategies

- **Structured Subject Matter Expert wargames with developed rule sets facilitate analysis and can be informed by a suite of tools**



Tools that address the Gaps in IW modeling

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- **War-gaming**

- Insight is gained by walking through situations
- However, analysis needs statistically significant results, which are hard to get with Human-In-The-Loop techniques
 - So, war-games may be branched
 - Computer can assist in rapid adjudication and “keeping all else the same”
 - Statistics can tease out the effect due to the interactions from bias brought to the game

- **Agent-Based Simulation**

- Works same way as war game: by walking through situations
- However, can do many more micro simulations than war games can, and compute macro level effects, for green PMESII simulation
- Agents are essential for simulating networked relations
- Agents are needed to simulate game theoretical and artificial intelligence based techniques

Tool: Agent Based Techniques

- **Game Theory**

- Agents can react to each other based on their perceptions of other agents perceptions ... modeling modelers as needed in IO warfare
- Agents can find equilibria
 - Nash equilibria...- solutions where no competing party can do better
 - Shelling points – cooperative solutions
 - These are great states to cajole a situation into for COA analysis
- Signaling theory finds payoffs for communication, needed in IO warfare

- **AI techniques**

- Expert systems: agents can hold modular rulesets that represent behaviors of social groups they belong to
- Uncertainty: agents can have perceptions and actions based on probability theory (bayesian networks) or “qualitative” reasoning (fuzzy systems)
- Machine learning techniques: Agents can learn how to deal with new situations and generalize about them using neural networks and genetic algorithms, or more advanced co-evolutionary techniques

Tools: Integrative Methods

- **System Dynamics Techniques**

- Captures homeostatic nature of natural and social systems
- Integrates phenomena through modeling the feedback between phenomena
- But not good for modular switching in and out: more of a static “spaghetti” program
- Can’t simulate networks and change in structure, but good for simulations that use “even mixing”
- Good for macro level processes that do not need feedback from the micro level

- **Integrative Toolkits**

- Since so many theories and strategies need recombination for exploration of the IW space, toolkits must address integration issues
- Models of different social phenomena are interdependent, and are different ways of viewing the same thing
- Models of micro and macro level (multi resolution) phenomena are also different ways of viewing the same thing
- Integrative toolkits need to find consensus and resolve conflicts between models that are different ways of viewing the same thing
- Feedback, as in the NSF DDDAS (Dynamic Data Driven Application Systems) program is promising

Current Irregular Warfare M&S Tools

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Mission Types	M&S Tools	Campaign Model
Counter Proliferation	Direct Combat Model (JCATS)	Not Directly Applicable
Counter Terrorism	Direct Combat Model (JCATS)	Not Directly Applicable
Foreign Internal Defense	PMESII (SEAS, MIT System Dynamics Model, Agile) Diamond-US	JICM, JWARS, JTLS
Special Reconnaissance	Direct Combat Model (JCATS) Pythagoras	JICM, ITEM, THUNDER, JTLS, JWARS, COSMOS*
Direct Action	Direct Combat Model (JCATS) JTLS	JICM, ITEM, THUNDER, JWARS, AMP, JTLS
Psychological Operations	System Dynamics SOF Behavioral Analysis Tool (Pythagoras)	JICM
Civil Affairs Operations	PMESII-TBD JTLS	JTLS
Unconventional Warfare	PMESII (SEAS, MIT System Dynamics Model, Agile, IGS/EBW, IBC) Direct Combat Model (JCATS) Tabletop Irregular Warfare Derivative UK's Peace Support Model (PSOM) Diamond-US Pythagoras Interim Semi-static Stability Model	JICM, JWARS? (during latter phases of the UW Campaign Only)
Information Operations	PMESII-TBD SOF Behavioral Analysis Tool (Pythagoras)	ITEM, THUNDER

* COSMOS is a mission level ISR model being evaluated in the SAC

SOF Tools:

Green = Planned SAC Tool – on hand or readily available
 Blue = Potential SAC Tool
 Orange = SAC Tool requiring validation and development effort
 Purple = Candidate SAC Tool requiring further assessment
 Red = Future DARPA capability

Analyzing the DPS: Tools Considered

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Tool	Pol	Mil	Econ	Soc	Info	Infra
Synthetic Environment for Analysis and Simulation (SEAS)				X	X	
System Dynamics	X	X	X			
Diplomatic and Military Operations in a Non-Warfighting Domain (DIAMOND)	X	X			X	
Algeria-based COIN/UW Wargame		X			X	
Integrated Semi-Static Stability Model (ISSM) – tracks stability levels	-	-	-	-	-	-
GWOT Extended “X” Wargame	X	X	X	X	X	X



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GWOT X-Game Methodology

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Methodology

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- **Extended “X” Wargame**

- Eight 2-week game turns; each turn representing one year of activity

- **Working Groups (action officers)**

- Blue/Green: developed yearly campaign plans/CONOPS by quarter
- Red: developed yearly campaign plans/CONOPS by month
- White: adjudicated each year

- **Oversight**

- 06 Level (Senior Steering Group)
- 1 Star / OPSDEPS / JCS TANK (Operational Availability-07)

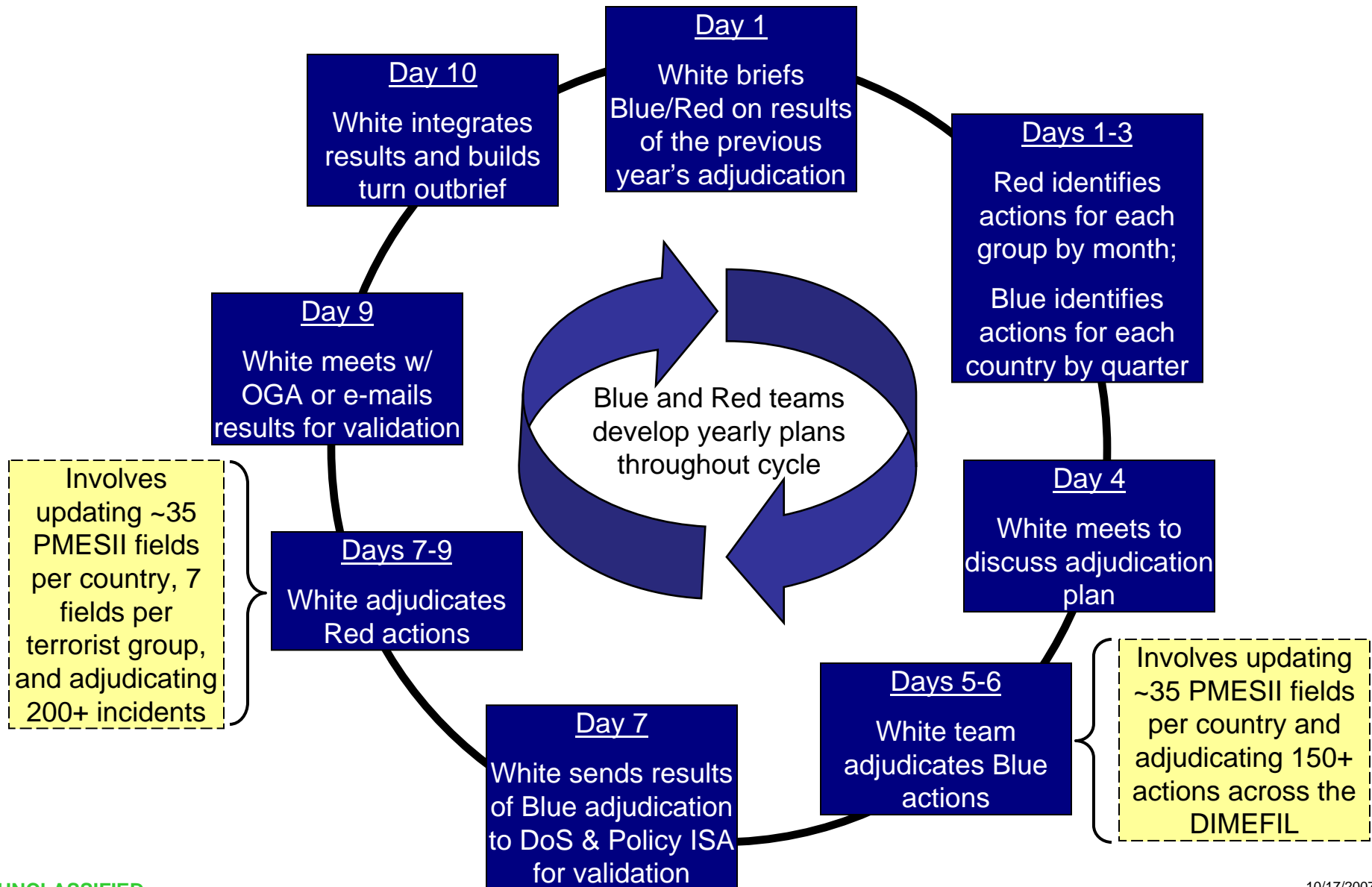
- **Participants**

- | | |
|--|-------------------------------------|
| – Program Analysis & Evaluation | – Regional and Unified Commands |
| – Policy International Security Affairs | – Services |
| – Policy Special Operations/Low intensity Conflict | – Defense Intelligence Agency |
| – J8 Warfighting Analysis Division | – National Counter Terrorism Center |
| – J5 Deputy Director for the War on Terror | – Central Intelligence Agency |
| – US Special Operations Command | – Department of State |

Wargame-based analysis: Results specific to scenario and participants

Game Turn Process (2 Week Cycle per Game Year)

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Red: Major Categories of Activities

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- Intel / surveillance
- Counterintelligence / operational security
- Recruiting / retention
- Training
- Financing
- Developing safe havens
- Information operations / propaganda
- Criminal activities
- Acquiring CBRNE

Blue X-Game Activities

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Military Activities	
Coercive Campaign	MAS (WMDI) – Maritime Approach Security WMD Interdiction
Counter Insurgency	MIO - Maritime Interdiction Operation
Counter Terrorist Support & Networks	MLE - Military Liaison Elements
Cooperative WMD Elimination	NFZ - No Fly Zone
Cooperative WoT	SoF – Show of Force
Enhanced Maritime Interdiction Operation	SSTR - Stability, Security, Transition and Reconstruction
TSC Exercises	STRK - strike -air, maritime or ground raid
Foreign Humanitarian Assistance - Relief	T&E - TSC Train and Equip
Foreign Internal Defense	UW - Unconventional Warfare
TSC Information Operations	WMDE – WMD Elimination
Joint Combined Exercise for Training	WMDI – WMD Interdiction
Locate, Tag and Track [WMD, terrorists, equipment]	

Interagency Activities (Examples)
Diplomatic <ul style="list-style-type: none"> Dialogue, coordinate, and convince countries to initiate/expand/cooperate on military operations, train and equip, border control, economic aid, WMD control/elimination Normalize/strengthen or cut/degrade diplomatic, economic, and trade relations with a country or non-state actor
Information <ul style="list-style-type: none"> Fund faculty exchanges, cultural exchanges, university scholarships Conduct counter propaganda operations, PSYOP, OPSEC, public affairs, Internet
Economic <ul style="list-style-type: none"> Provide economic development aid, disaster relief aid, foreign direct investment, favorable trade agreements, funding for FMF, IMET, Counter Terrorism Fellowship Program
Financial <ul style="list-style-type: none"> Locate, track, and interdict financial transfers to terrorist organizations
Intelligence <ul style="list-style-type: none"> Engage in information sharing, intelligence training, regional intelligence centers
Law Enforcement <ul style="list-style-type: none"> Build/upgrade/expand law enforcement capabilities and/or judicial system (local, regional, national) on a unilateral/bilateral basis and/or in conjunction with NGO Conduct multilateral and/or bilateral anti-illegal immigration /narcotics/ corruption/criminal operations



White: Adjudication Overview

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The White team maintains the following spreadsheets throughout the duration of the extended wargame

- Red Incident Tracker (Blue and Red versions)
- Blue Incident Tracker (Blue and Red versions)
- PMESII Tracker
- Terrorist Group Tracker (Blue and Red versions)



White: Red and Blue Incident Trackers

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- **Each incident that takes place during a given year is tracked in two Incident Trackers**
 - Blue Version: tracks Blue's perspective of the result of each incident or action
 - Red Version: tracks Red's perspective of the result of each incident or action
- **Each version includes:**
 - Incident description (e.g., surveillance, training, attacking, kidnapping)
 - Date
 - Location
 - Magnitude
 - White adjudicated result

Example

Red Incident	Date	Result
Attempt surveillance, video taping, and documenting of Military Liaison Element (MLE) activity to collect evidence of U.S. military presence in country X	Jan 20XX	No detection of MLE activities

White: PMESII Tracker Overview

The PMESII tracker is the primary method for determining the effects of every Blue and Red action on conditions within each country

PMESII Factor	Adjudication Method
Political Stability	FSI Indicator Tool and SME Rule Set
Military Capability	SME Rule Sets and White Cell Discussion
Economic Stability	FSI Indicator Tool and SME Rule Set
Social Stability	FSI Indicator Tool
Infrastructure Levels	FSI Indicator Tool
Information (Public Support Levels)	White Cell Discussion

FSI = Failed State Index
SME = Subject Matter Expert

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PMESII Tracker 2.0		2007				
		Start	Blue Impact	Red Impact	Change	End
Country X		Country X				
Political						
Average Political Stability		5.00	0.05	0.20	0.25	5.25
Military						
Mission		1.00	0.05	0.00	0.05	1.05
Operations Experience		1.00	0.04	0.10	0.14	1.14
Location		1.00	0.00	0.00	0.00	1.00
Political Considerations		1.00	0.03	0.00	0.03	1.03
Training		1.00	0.11	0.00	0.11	1.11
Leadership		1.00	0.06	0.00	0.06	1.06
Morale/Loyalty/Discipline		1.00	0.05	-0.20	-0.15	0.85
Weapons		1.00	0.03	0.00	0.03	1.03
Doctrine/Tactics		1.00	0.10	0.00	0.10	1.10
C2		1.00	0.05	0.00	0.05	1.05
Intelligence		1.00	0.05	0.00	0.05	1.05
Equipment		1.00	0.05	0.00	0.05	1.05
Communications/Computers		1.00	0.01	0.00	0.01	1.01
Maintenance		1.00	0.03	0.00	0.03	1.03
Inter-relationships		1.00	0.00	0.00	0.00	1.00
External Relationships		1.00	0.01	0.00	0.01	1.01
Airlift/Sealift Capability		1.00	0.01	0.00	0.01	1.01
Resources (Financial and Geographic)		1.00	0.03	0.00	0.03	1.03
Force Structure		1.00	0.01	0.00	0.01	1.01
Blue/Green Coordination level		1.00	0.10	0.00	0.10	1.10
Other		1.00	0.00	0.00	0.00	1.00
Overall SOR/CT Capability		1.00	0.03	0.00	0.03	1.03
Economic						
Average Economic Stability		3.00	0.02	0.30	0.32	3.32
Social						
Average Social Stability		7.00	0.12	0.00	0.12	7.12
Infrastructure						
Deterioaration of Public Services (FSI-I3)		4.00	-0.45	0.00	-0.45	3.55
Information						
Public Opinion of Green		23.00	1.00	-3.00	-2.00	21.00
Public Opinion of Red Terrorist Group #1		4.00	0.00	0.20	0.20	4.20
Public Opinion of Red Terrorist Group #2		3.00	0.00	-0.10	-0.10	2.90
Public Opinion of Red Terrorist Group #3		7.00	0.00	0.50	0.50	7.50
Public Opinion of Red Terrorist Group #4		3.00	0.00	0.30	0.30	3.30
Public Opinion of Blue		50.00	1.00	3.00	4.00	54.00



DIMEFIL Effects on the PMESII Tracker

Blue Military Adjudication Rules						
	Results					
	P	M	E	S	I(nfra)	
CC - coercive campaign	0		0	0	0	
CI - counter insurgency	-2.1		0.9	0.6	0	
CS - cyber strike						
CS-R cyber strike response						
CTSN - Counter, terrorist support & networks						
C-WMD - Cooperative WMD elimination	0			0		
CWOT - Cooperative WoT	0.1					
EMIO - enhanced maritime interdiction operation	0		0		0	
Exer - TSC Exercises	0			0		
FHA-R - Foreign Humanitarian Assistance - Relief	0		0	0	0	
FID - Foreign Internal Defense	0			0		
IO - TSC Information Operations						
JCET - Joint Combined Exercise for Training	0					
LTT - locate, tag and track (wmd, terrorists, equipment)		0				
MIO - maritime interdiction operation	0		0		0	
MLE - military liaison elements						
NFZ - no fly zone	0		0	0		
SoF - Show of Force	0					
SSTR - stability, security, transition and reconstruction	0		-0.3	0	-0.9	
STRK - strike -air, maritime or ground raid	0		0		0	
T&E - TSC Train and Equip	0			0		
UW - Unconventional warfare	0		0	0	0	
Total	-2	0	0.6	0.6	-0.9	

Blue Non-Military Adjudication Rules

Diplomatic					
	P	M	E	S	I(nfra)
-Convince partner nation(s) to:					
•Initiate or expand troop commitment to combined operations.	0				
•Initiate or expand train and equip activities in a third country with US or third party funding.	0			0	
•Cooperate on border control to include maritime borders.	0		0	0	
•Initiate or expand financial/economic aid to a third country.	0		0	0	
•Resolve military aid/sales legal restriction issues (e.g. Article					
-Convince country(s) to:					
measures	0		0		0
•End/initiate/upgrade support for other countries, NGOs.	0		0	0	
•Accelerate/facilitate peace agreement implementation.	0			0	
•Grant concession to a third party.	0		0	0	
•Modify/moderate its internal policies.	0		0	0	
-Normalize/strengthen or cut/degrade diplomatic, economic, trade, and general relations with a country or non-state actor	0.12		0	0	
-Threaten military action up to regime change if the country does not comply with US desired action. Offer economic, military, or other incentives for compliance with US objectives	0				
Information					
	P	M	E	S	I(nfra)
- Fund faculty exchanges, cultural exchanges, university					
- Promote education/curriculum reform	0.1			0	
- Conduct Counter Propaganda Operations	0				
- Conduct Military Deception	0				
- Execute PSYOP	0				
- Execute OPSEC					
- Conduct Public Affairs	0				
- Discredit/foster support for organizations, leaders	0.06				
- Conduct Countering Adversary Use of Internet Operations					
- "Deprogram" Salafist jihadis with respected, scholarly mullahs based in non-violent Islamic doctrine.					
Economic					
	P	M	E	S	I(nfra)
- Provide economic development aid	0.2		-0.2	0	-0.3
- Encourage foreign direct investment (FDI)	0.04		-0.2	0	-0.25
- Negotiate favorable trade agreements and/or WTO status	0		-0.11		
- Channel aid into development programs that visibly show international NGO and Western government involvement.	-0.4		0.07	0	-0.1
- Provide additional aid for reconstruction efforts after natural	0			0	0
- Encourage economic development and humanitarian aid in under-served areas	-0.3		-0.1	0	-0.1
- Provide funding for FMF, IMET, Counter Terrorism Fellowship Program					
- Implement financial control operations against groups providing financial support to terrorist organizations	0		0		
Financial					
	P	M	E	S	I(nfra)
organizations					
-Conduct banking reform	0				
-Provide foreign currency loans during exchange rate crisis			0		
-Control inflation					
-Re-structure debts	0		0		
-Extend credit	0		0		
Intelligence					
	P	M	E	S	I(nfra)
-Conduct Counter Intelligence					
-Engage in information and intelligence sharing					
-Establish regional intelligence center					
-Establish intelligence training					
Law Enforcement					
	P	M	E	S	I(nfra)
-Build/upgrade/expand law enforcement capabilities and/or judicial system (local, regional, national) on a unilateral/bilateral basis and/or in conjunction with NGO	-0.2		0		
-Conduct multilateral and/or bilateral anti-illegal immigration /narcotics/ corruption/criminal operations	0			0	
Total	-2.38	0	0.06	0.6	-1.65

- These two tables detail the White method for adjudicating the PMESII* effects of each activity

- Conditional rule sets
- Failed State Index (FSI)
- Discussion
- Generic SME rule sets

Conditional rule	
FSI Questions	
Merits discussion	
Generic Rule	
No Effect	

*Information effects are determined by White discussions and heuristics

UNCLASSIFIED

White: Updating PMESII Levels using the FSI Tool

OSD/PA&E

- Each action's impact on Political, Economic, Social, and Infrastructure stability levels is determined by analyzing whether or not the action results in a rise/fall of one or more of the Fund for Peace's Failed State Index (FSI) indicators

Example

- Action: Well coordinated Red IO plan that aims to highlight the economic differences among sects
- Adjudication Process (example effect on economic levels shown to the right):
 - White determines (yes=1,no=0) whether or not the action affects the FSI tool questions (Answer column)
 - FSI tool calculates a random draw from an appropriate range (Adjustment column)
 - White team inserts final adjustment into the PMESII tracker adjudication matrix (Total Adjustment)

<i>ECONOMIC</i>			
Economic	Uneven Economic Development along Group Lines (FSI-I5)	Answer	Adjustment
5A	Does the action increase/decrease group-based inequality, or perceived inequality, in education, jobs, and economic status?	1.0	0.5
5B	Does the action result in increases/decreases in group-based impoverishment as measured by poverty levels, infant mortality rates, education	0.0	0.0
5C	Does the action result in the rise/fall of communal nationalism based on real or perceived group inequalities?	1.0	0.6
		Average	0.4
Economic	Sharp and/or Severe Economic Decline (FSI-I6)	Answer	Adjustment
6A	Does the action contribute to a pattern of progressive economic decline/growth of the society	1.0	0.2
6B	Does the action contribute to a sudden drop/rise in commodity prices, trade revenue, foreign	1.0	0.8
6C	Does the action contribute to a collapse or devaluation of the national currency?	1.0	0.1
6D	Does the action contribute to extreme social hardship imposed by economic austerity programs?	0.0	0.0
6E	Does the action contribute to the growth/shrinkage of hidden economies, including the drug trade, smuggling, and capital flight?	0.0	0.0
6F	Does the action contribute to increase/decrease in levels of corruption and illicit transactions among the general populace?	0.0	0.0
6G	Does the action contribute to the failure of the state to pay salaries of government employees and armed forces or to meet other financial obligations to its citizens, such as pension payments?	0.0	0.0
		Average	0.2
		Total Adjustment	0.3



White: Updating PMESII Levels using SME Rule Sets

OSD/PA&E

- Each action's impact on Military / Counter-terrorism (CT) effectiveness levels for each country is tracked on a 1-3 scale where:
 - 1=Inadequate
 - 2=Adequate
 - 3=Strong
- Unique rule sets developed for DIMEFIL activities determined to impact Green CT effectiveness levels (example rule set shown to the right)
- Each action's impact on Green military/CT levels is calculated using rules developed by SMEs

Example: When Blue conducts a CWOT mission, Green military capabilities are updated according to a table



White: Updating PMESII Levels using Heuristics

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OSD/PA&E

- Each action's effect on Information (public support) levels is determined through white cell discussion
- Heuristics were created to guide the process

Example

- Action: Blue conducts a Joint Combined Exercise for Training (JCET)
- Rule
 - If the Green public does not support Blue and JCET becomes public knowledge, then Green public support falls by X and Blue public support falls by Y where $X < Y$

White: Terrorist Group Tracker

OSD/PA&E

- Tracks for each of the terrorist groups the following factors:
 - Defection rates
 - Financing
 - IO success rate
 - Recruitment rates
 - Training rates
 - Membership quantity (range)
 - Locations of operation
 - Freedom to operate
 - Overall effectiveness level
- Defections, financing, popular support, recruitment, training, and effectiveness levels are reported as follows:
 - Static/+/- represent the trend of improvement/deterioration in each area
 - Red/Yellow/Green represent group effectiveness in each area (e.g., after several years of trending positively a group may move from yellow to green for a certain category)
- The Blue version tracks Blue perception of capability while the Red version tracks “ground truth”

Example

Terror Group X	2007	2008	2009	2010	2011	2012
Defection Rates	static	static	-	-	-	-
Financing	+	static	static	static	static	+
IO	static	-	-	-	-	-
Recruitment	+	static	static	static	static	static
Training	static	static	static	+	+	static
Quantity	200 to 500	200 to 500	200 to 500	200 to 500	200 to 500	200 to 500
Location	Country Y	Country Y	Country Y	Country Y	Country Y	Country Y
Freedom to Operate	static	-	-	static	static	static
Overall Effectiveness	static	static	static	+	+	+